National Institute of Environmental Health Sciences

How human practices have affected vector-borne diseases in the past: A study of malaria transmission in Alpine valleys

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Abstract:

BACKGROUND: Malaria was endemic in the Rhone-Alpes area of eastern France in the 19th century and life expectancy was particularly shortened in Alpine valleys. This study was designed to determine how the disease affected people in the area and to identify the factors influencing malaria transmission. METHODS: Demographic data of the 19th century were collected from death registers of eight villages of the flood-plain of the river Isere. Correlations were performed between these demographic data and reconstructed meteorological data. Archive documents from medical practitioners gave information on symptoms of ill people. Engineer reports provided information on the hydraulic project developments in the Isere valley. RESULTS: Description of fevers was highly suggestive of endemic malaria transmission in the parishes neighbouring the river Isere. The current status of anopheline mosquitoes in the area supports this hypothesis. Mean temperature and precipitation were poorly correlated with demographic data, whereas the chronology of hydrological events correlated with fluctuations in death rates in the parishes. CONCLUSION: Nowadays, most of the river development projects involve the creation of wet areas, enabling controlled flooding events. Flood-flow risk and the re-emergence of vector-borne diseases would probably be influenced by the climate change. The message is not to forget that human disturbance of any functioning hydrosystem has often been linked to malaria transmission in the past.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2042507

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Precipitation, Temperature

Extreme Weather Event: Flooding

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Freshwater, Mountain

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : France

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content